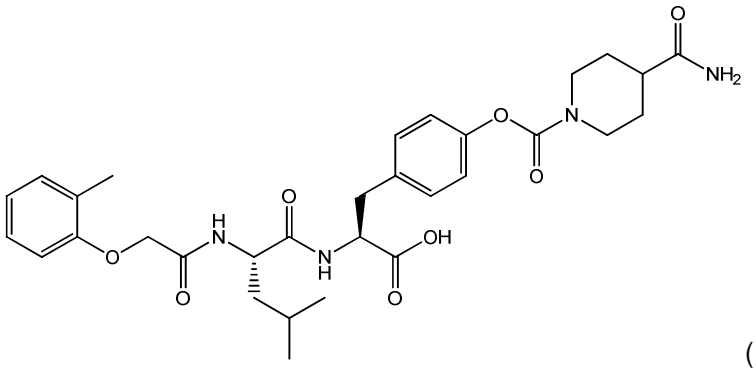
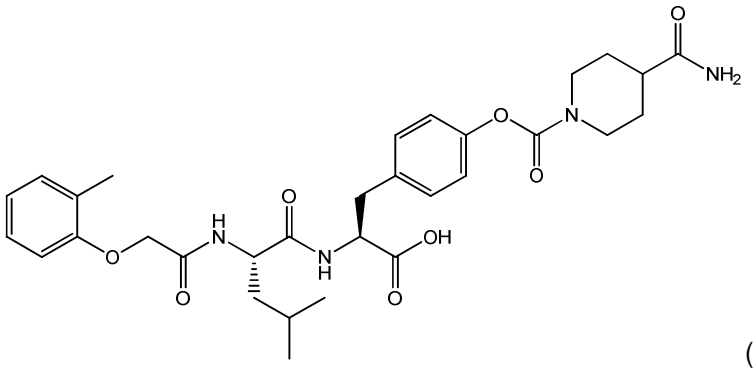


(I)

or a pharmaceutically acceptable salt, ester, anhydride, hydrate, solvate, polymorph, optical isomer, racemate, diastereoisomer or enantiomer thereof (collectively referred to as therapeutic agent **A**). In certain examples, therapeutic agent **A** is applied topically. Topical administration may be to the cornea, the conjunctival sac, and/or the eyelid. In certain other examples, therapeutic agent **A** is applied locally, e.g., subconjunctivally, intracamerally, intravitreally, subtenon, subretinally, subchoroidally, or suprachoroidally.

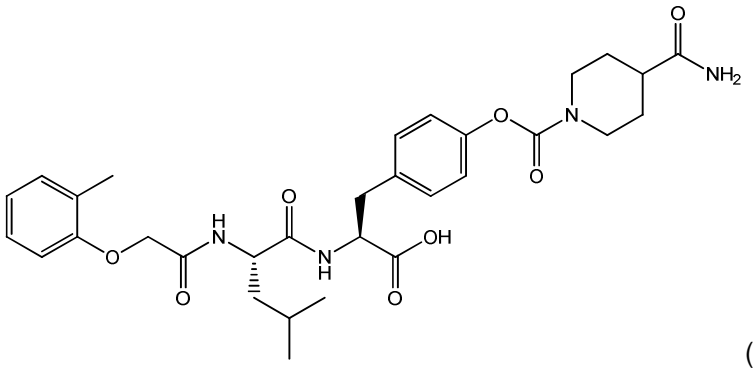
Disclosed is a compound of formula I



(I)

or a pharmaceutically acceptable salt, ester, anhydride, hydrate, solvate, polymorph, optical isomer, racemate, diastereoisomer or enantiomer thereof (collectively referred to as therapeutic agent **A**) for use in treating an ocular inflammatory condition. In certain examples, therapeutic agent **A** is provided in a pharmaceutically acceptable vehicle, such as a pharmaceutically acceptable ophthalmic vehicle.

Disclosed is a pharmaceutical composition comprising a compound of formula I



(I)

or a pharmaceutically acceptable salt, ester, anhydride, hydrate, solvate, polymorph, optical isomer, racemate, diastereoisomer or enantiomer thereof (collectively referred to as therapeutic agent **A**) and one or more pharmaceutically acceptable excipients, wherein the composition is useful for treating an ocular inflammatory condition. In certain examples, the pharmaceutical composition is suitable for ocular administration. In some such examples, the pharmaceutical composition is suitable to be applied topically. In certain examples, the pharmaceutical composition is suitable to be applied to the conjunctival sac or to the eyelid. In certain other examples, the pharmaceutical composition is suitable to be applied subconjunctivally, intracamerally, intravitreally, subtenon, subretinally, subchoroidally, or suprachoroidally.

Disclosed is a pharmaceutical composition comprising therapeutic agent **A** and one or more pharmaceutically acceptable excipients, wherein the composition is useful for treating an ocular inflammatory condition when applied in the form of an eye drop, spray or mist.

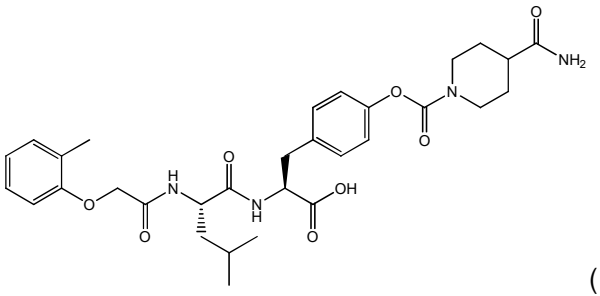
Disclosed is a pharmaceutical composition comprising therapeutic agent **A** and one or more pharmaceutically acceptable excipients, wherein the composition is useful for treating an ocular inflammatory condition when applied as a topical ophthalmic formulation.

Disclosed is a method for treating an ocular inflammatory condition in a mammal (which mammal may be a human) in need thereof by preventing or reducing the migration of antigen-presenting cells to the lymph nodes. Such method comprises administering to said mammal (which mammal may be a human) a therapeutically effective amount of therapeutic agent **A**.

amount of: (a) a pharmaceutical composition comprising therapeutic agent **A**; (b) a non-steroidal anti-inflammatory drug selected from the group consisting of bromfenac, diclofenac, flurbiprofen, ketorolac, and nepafenac; and (c) one or more pharmaceutically acceptable excipients.

Disclosed is a method for treatment of an ocular inflammatory condition, such as DED, in a mammal (which mammal may be a human) in need thereof comprising administering to said mammal/human a therapeutically effective amount of: a) a pharmaceutical composition comprising therapeutic agent **A**; (b) an LFA-1 integrin antagonist such as lifitegrast; and (c) one or more pharmaceutically acceptable excipients.

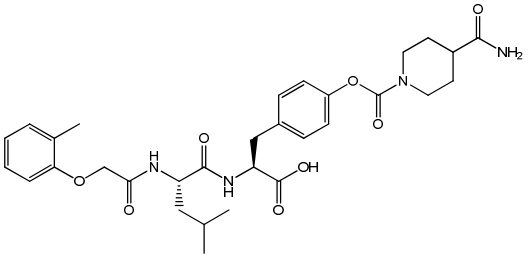
Disclosed is the use of a compound of formula I



(I)

or a pharmaceutically acceptable salt, ester, anhydride, hydrate, solvate, polymorph, optical isomer, racemate, diastereoisomer or enantiomer thereof in the manufacture of a medicament for the treatment of an ocular inflammatory condition.

In one aspect, the present disclosure refers to use of a compound of formula I



(I)

or a pharmaceutically acceptable salt, ester, hydrate, solvate, polymorph, optical isomer, racemate, diastereoisomer or enantiomer thereof, in the manufacture of a medicament for treating dry eye disease in a human subject through ocular administration, wherein the medicament is formulated as an eye drop, a spray, or a mist, and wherein the medicament is to be administered at a dosing concentration in the range of 1 mg/mL to 30 mg/mL of the compound.

In certain examples of any of the aforementioned aspects, the ocular inflammatory condition is dry eye disease. In other examples of each aspect, the ocular inflammatory condition is non-infectious uveitis (anterior, intermediate, posterior, pan), non-infectious conjunctivitis, iritis, or scleritis.

In certain examples of any of the aforementioned aspects, therapeutic agent **A** is compound (I) or a pharmaceutically acceptable salt thereof. In certain examples, therapeutic agent **A** is the potassium salt of compound (I).

It will be understood by the skilled artisan that any of the preceding methods of treatment and/or uses can be accomplished by the topical or other ocular administration of a pharmaceutical composition containing therapeutic agent **A**. The term "topical administration" as used herein includes application in the form of an eye drop, spray, mist, gel, cream or ointment applied to the surface of the eye, application to the conjunctival sac, application via an insert, application via a drug delivery device designed to deliver ophthalmic medications, and the like. The term "other ocular administration" as used herein includes subconjunctival, intracameral, intravitreal, subtenon, subretinal, subchoroidal, or suprachoroidal application of a pharmaceutically acceptable formulation, insert or device designed to deliver ophthalmic medications, and the like.

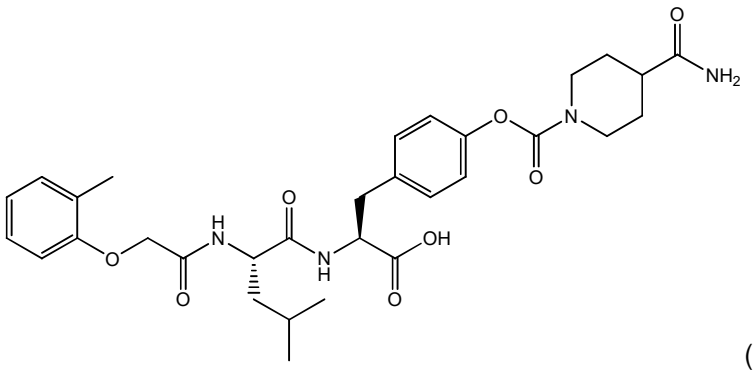
Based on the data presented herein, it is expected that blockade of α4 integrin receptors will treat and ameliorate other ocular inflammatory and immunological conditions whose pathogenesis involves leukocytes, such as all forms of uveitis (anterior, intermediate, posterior, pan), conjunctivitis, iritis, or scleritis (diffuse, nodular, necrotizing) in addition to DED.

The compound of formula I, which is also known as(*S*)-3-(4-((4-carbamoylpiperidine-1-carbonyl)oxy)phenyl)-2-((*S*)-4-methyl-2-(2-(*o*-tolyloxy)acetamido)pentanamido) propanonic acid; or (2S)-3-[4-({[4-(Aminocarbonyl)-1-piperidinyl]carbonyl}oxy)phenyl]-2-[((2S)-4-methyl-2-{[2-(2-methylphenoxy)acetyl]amino}pentanoyl)amino] propanoic acid; or GW559090, is a potent integrin α4 antagonist which had previously been clinically investigated in asthma patients by the oral inhalation route (Ravensberg et al., 2006).

Without being bound to any mechanistic theory of action, the effect of the compound of formula I appears to be both anti-inflammatory and disease modifying. When administered locally to the eye, the compound of formula I improved the corneal epithelial barrier function, decreased inflammatory markers in the cornea and conjunctiva, reduced the recruitment and homing of T lymphocytes to the conjunctiva, and, surprisingly, blocked the migration and activation of antigen-presenting cells to the draining lymph nodes in a murine model of DED. The compound of formula I was ineffective when administered systemically. This is

What is claimed is:

1. Use of a compound of formula I



(I)

or a pharmaceutically acceptable salt, ester, hydrate, solvate, polymorph, optical isomer, racemate, diastereoisomer or enantiomer thereof, in the manufacture of a medicament for treating dry eye disease in a human subject through ocular administration, wherein the medicament is formulated as an eye drop, a spray, or a mist, and wherein the medicament is to be administered at a dosing concentration in the range of 1 mg/mL to 30 mg/mL of the compound.

2. The use according to claim 1, wherein the medicament is to be administered to the human subject at a dosing concentration of 1 mg/mL, 3 mg/mL, 10 mg/mL, or 30 mg/mL of the compound.

3. The use according to claim 1, wherein the medicament is to be administered to the human subject at a dosing concentration of 1 mg/mL of the compound.

4. The use according to claim 1, wherein the medicament is to be administered to the human subject at a dosing concentration of 3 mg/mL of the compound.

5. The use according to claim 1, wherein the medicament is to be administered to the human subject at a dosing concentration of 10 mg/mL of the compound.

6. The use according to claim 1, wherein the medicament is to be administered to the human subject at a dosing concentration of 30 mg/mL of the compound.

7. The use according to claim 1, wherein the medicament is formulated as an ophthalmic solution.

8. The use according to claim 7, wherein the ophthalmic solution contains 1 mg/mL, 3 mg/mL, 10 mg/mL, or 30 mg/mL of the compound.

9. The use according to claim 7, wherein the ophthalmic solution contains 1 mg/mL of the compound.

10. The use according to claim 7, wherein the ophthalmic solution contains 3 mg/mL of the compound.

11. The use according to claim 7, wherein the ophthalmic solution contains 10 mg/mL of the compound.

12. The use according to claim 7, wherein the ophthalmic solution contains 30 mg/mL of the compound.

13. The use according to any one of claims 1-12, wherein the medicament is for use in combination with one or more additional therapeutic agents selected from the group consisting of (a) cyclosporin A; (b) a steroid selected from the group consisting of dexamethasone base, dexamethasone phosphate, difluprednate, fluocinolone, fluorometholone base, fluorometholone acetate, loteprednol, prednisolone acetate, prednisolone phosphate, rimexolone, and triamcinolone acetonide; and (c) a non-steroidal anti-inflammatory agent selected from the group consisting of bromfenac, diclofenac, flurbiprofen, ketorolac, and nepafenac.